



## A new *Gyalidea* species (Ascomycota: *Solorinellaceae*) from India

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### Abstract

*Gyalidea corticola* sp. nov. (*Solorinellaceae*) is described as a new species from India. The species is characterized by its pale brownish apothecia, submuriform ascospores and habitat preference.

**Key words** – lichen – *Ostropales* – Sikkim – taxonomy

### Introduction

The Genus *Gyalidea* Lett. ex Vězda is a widespread genus of family *Solorinellaceae* comprises 64 species world wide (Kirk & Cooper 2009). The genus is characterized by gyalectoid apothecia, non-amyloid hymenium, simple, septate paraphyses and hyaline, submuriform or transversely septate ascospores. Most of the species of the genus grow on soil, rocks, mosses or on plant debris, except *G. minuta* Boom & Vězda and *G. fruticola* Svensson & Thor which occur on tree bark. A third new corticolous species collected for Sikkim, India is being described as *Gyalidea corticola*.

### Materials & methods

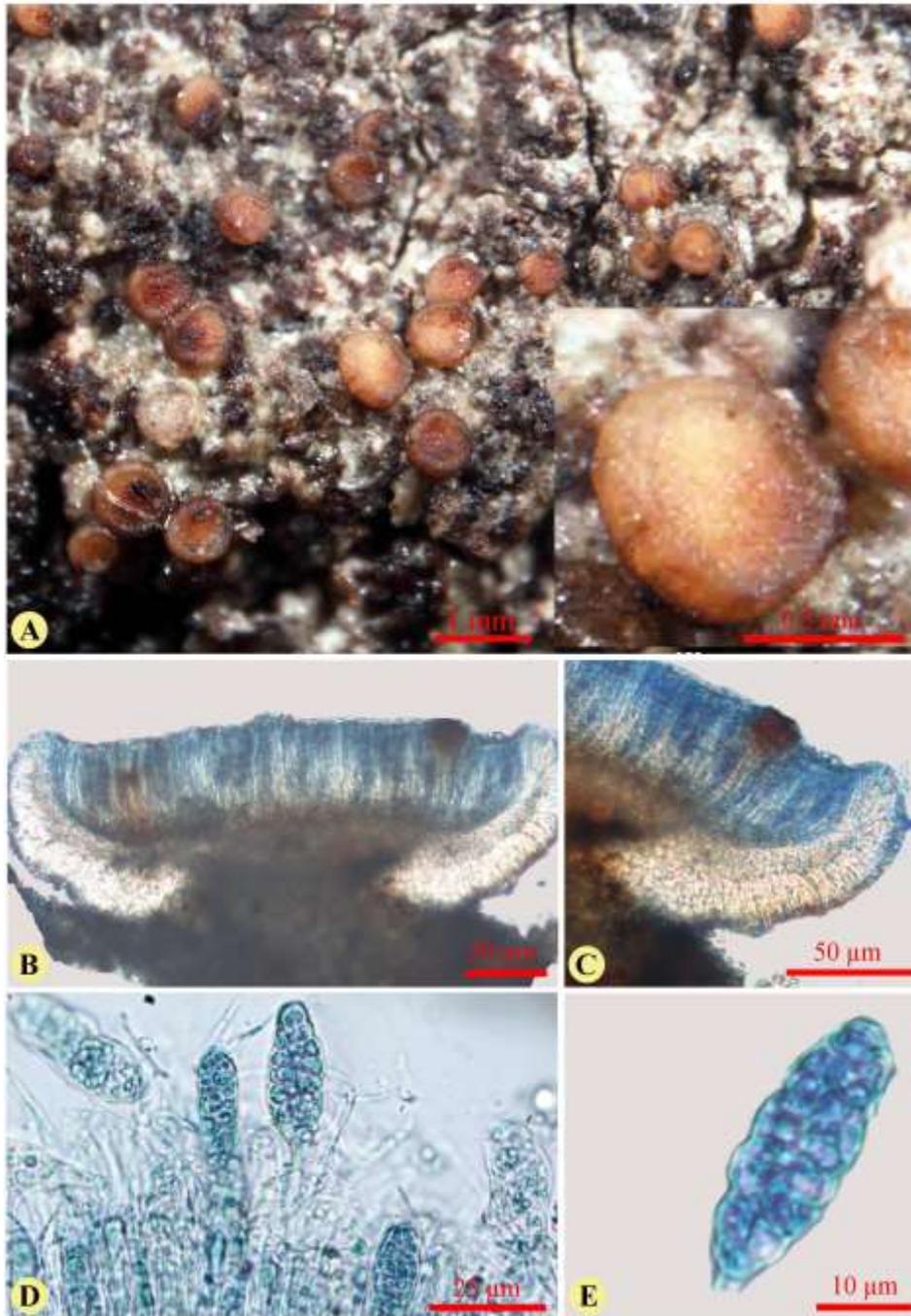
The new species is described based on the specimen collected from the Sikkim, India. Identification work was carried out in the Lichenology Laboratory, Botanical Survey of India, Central Regional Centre, Allahabad. The images displayed in Figs. 1 & 2 were obtained with stereomicroscope (Olympus SZ61) and compound microscope (Nikon Eclipse 50i). Sections of thalli and ascomata were mounted in water, 10% KOH, and Lugol's iodine solution. All measurements were made in water. Spore measurements are given as (the minimum value recorded–) (mean value – standard deviation) – (mean value + standard deviation) (–the maximum value recorded). The mean value ( $\bar{X}$ ), the standard deviation (s.d.) and the total sample size ( $n$ ) is given in parentheses. Chemical constituents were identified by thin-layer chromatography in solvent C (170 ml toluene, 30 ml glacial acetic acid) according to standardized methods (Orange et al. 2001). Voucher specimen is deposited in the herbarium of Botanical Survey of India, Central Regional Centre, Allahabad (BSA).

## Results

### Taxonomic descriptions

*Gyalidea corticola* Pooja Gupta & G.P. Sinha, **sp. nov.**  
Mycobank No.: MB 812992.

Figs. 1 & 2

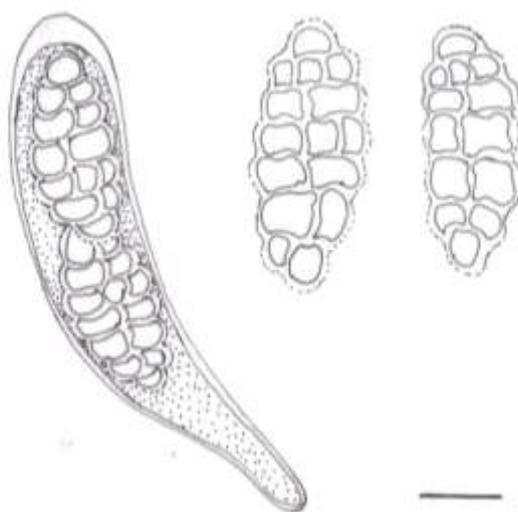


**Fig. 1** – *Gyalidea corticola*, A, habit. B & C, vertical section of apothecium. D & E, ascospores.

Etymology – The specific epithet '*corticola*' refers to the substrate.

Thallus crustose, corticolous, rimose–areolate, cracked, rough, up to 6 cm, grey greenish–brown. Isidia and soredia not seen. Photobiont green–alga, cells 8–12  $\mu\text{m}$  diam.

Apothecia numerous, rounded, adnate to sessile, constricted at base, 0.4–0.8 mm diam., 155–160  $\mu\text{m}$  high and 354–408  $\mu\text{m}$  wide, yellowish–brown, translucent when wet, without thalline margin; disc concave to almost flat; margin smooth, entire, concolorous with disc; exciple well developed, 15–35  $\mu\text{m}$  wide, brownish; epithecium hyaline, indistinct; hymenium hyaline, 40–50  $\mu\text{m}$  high, I–, KI+ slightly blue; hypothecium pale brownish, 20–40  $\mu\text{m}$  thick; paraphyses simple, rarely sparsely branched and anastomosing, distinctly septate, 0.87–1.20  $\mu\text{m}$  thick; asci clavate, 2–4 spored, 55–78  $\times$  15–18  $\mu\text{m}$ ; ascospores hyaline, narrowly ellipsoidal, ends acute, submuriform, 5–7 transverse septa and 0–2 longitudinal septa, (27–)29–37(–43)  $\times$  (9–)9–15(–17)  $\mu\text{m}$  (length:  $\bar{X}$  = 33.42  $\mu\text{m}$ , s.d. = 4.17  $\mu\text{m}$ , n = 8; width  $\bar{X}$  = 12.64  $\mu\text{m}$ , s.d. = 3.16  $\mu\text{m}$ , n = 8), without a distinct perispore.



**Fig. 2** – *Gyalidea corticola*, asci and ascospores. – Bar = 10  $\mu\text{m}$ .

Chemistry – Thallus K–, C–, KC–, P–; hymenium (hymenial gelatin, paraphyses, asci) I–, KI+ slightly blue.

Distribution – Known only from the type collection.

Specimen examined – India, Sikkim: Penangla (27° 22" N, 88° 36" E), c. 1880 m. alt., on the bark of a tree, 19 November 2006, G.P.Sinha 3597 (Holotype–BSA).

Notes – Among the corticolous species of this genus, *Gyalidea corticola* resembles *G. minuta* Boom & Vězda and *G. fruticola* Svensson & Thor, in having brownish apothecia and submuriform ascospores. However, it differs from both the latter species in the size of apothecia and larger ascospores. The Apothecia of *Gyalidea corticola* is 0.4–0.8 mm in diam, whereas it is 0.15–0.2 mm and 0.1–0.3 mm diam. in *G. minuta*. and *G. fruticola* respectively. Similarly ascospores of *Gyalidea corticola* are 20–30  $\times$  5–15  $\mu\text{m}$  whereas ascospores are 12–15  $\times$  5–9  $\mu\text{m}$  and 17–23  $\times$  5–9  $\mu\text{m}$  in *G. minuta* and in *G. fruticola* respectively (Boom, P.P.G. van den & Vězda, A. 1995; Svensson M, & Thor G. 2007).

Among non-corticolous *Gyalidea* species, it is somewhat similar to *G. subscutellaris* (Vězda) Vězda and *G. psammoica* (Nyl.) Lettau ex Vězda, due to their darker apothecia but *Gyalidea subscutellaris* has smaller apothecia 0.2–0.3 mm diam and ascospores (16–20 µm) and grows on bryophytes, while *G. psammoica* also has smaller ascospores (14–18 µm) and grows on sandy soil (Vězda 1966).

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